

FILE 'CAPLUS' ENTERED AT 23:53:23 ON 26 JUN 2003

L17 128572 S L15 OR L16

L18 120 S L17 AND (HONEYBEE# OR BEE OR BEES OR APIS)

L19 5 S L18 AND (MITE OR MITES OR VARROA OR ACARAPIS)

→
See also next page
for more

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AN 1998-83064 CROPU I G
TI Controlling infestations in honey bee colonies e.g.
Varroa mites using slow release gel containing
essential oil or organic acid e.g. thymol.
IN Watkins M
PA Vita-Euro
LO Odiham, U.K.
PI WO 9747193 A1 19971218
AI GB 1996-12403 19960613
WO 1997-EP3078 19970612
DT Patent
LA English
OS WPI: 1998-051935 [05]
FA AB; LA; CT
TI Controlling infestations in honey bee colonies e.g.
Varroa mites using slow release gel containing
essential oil or organic acid e.g. thymol.
AB A method for control of acarid, lepidopteran, fungal or bacterial
infestations in **honeybee** colonies (especially **Varroa**
jacobsoni) is described, using a slow release gel, containing an
essential oil (preferably menthol, geraniol, thymol, myrcene, citral,
limonene, carene, camphor, eugenol, cineole, lemon oil,
eucalyptus oil or neem oil, especially thymol) or organic acid (e.g.
formic, acetic or oxalic acid), to the hives. The slow release gel is
also claimed. The gel is in a shallow tray dispenser with a hermetically
sealing lid or in strips, pellets, tablets or dispenser trays, and is
used for a 4-6 week treatment period. Preparation of formulations of
thymol, camphor, calcium oxalate, cineole (eucalyptol), **limonene**
, menthol, neem oil, acetic acid and formic acid. Tests with a 25%
thymol formulation, at 1 or 2 trays/hive, for control of *V. jacobsoni* are
also described.
ABEX The method is also useful for control of **Acarapis woodii**,
Tropilaelaps clareae, *Galleria mellonella*, *Achroia grisella*, *Braula*
caeca, *Ascosphaera apis*, *Bacillus* larvae and *Melissococcus*
pluton, and is effective against both pyrethroid-resistant and
susceptible *V. jacobsoni*. The concentration of oil or acid is chosen to
reduce the level of **Varroa** infection to less than 20% over at
least one mite reproductive cycle. The formulation comprises a
regulated dose release of active substance into the hive over a set
period of time, at 10-40 deg. The thymol preparation described consisted
of 0.38 parts Carbopol EZ1 dissolved in 73.86 parts water, followed by
0.76 parts thymol, then 0.76 parts triethanolamine, to form a gel.
Shallow plastic trays are filled with 50 g portions of the gel, then
hermetically sealed. Similar formulations containing thymol (10, 15, 20,
25, 30, 35 or 40%), camphor (25%) and calcium oxalate (25%) are
described, also suspensions containing cineole (25%), **limonene**
(25%), menthol (25%), neem oil (25%), acetic acid (30%) and formic acid
(25%). In tests with the 25% thymol gel, 1 or 2 trays, each containing
50 g gel, were opened and placed in a hive, on top of the brood frames,
for 6 weeks. Average temperature was 33-34 deg inside the hive and 17-35
deg outside. After 6 weeks, *V. jacobsoni* infestation was reduced by
48.3% with 1 tray, 77.2% with 2 trays, and 12.9% in the untreated
control. (16)

AN 1990:174103 CAPLUS
 DN 112:174103
 TI Synergistic varroicide aerosol containing acetone for **honeybee**
 colonies
 IN Vesely, Vladimir; Titera, Dalibor; Kamler, Frantisek
 PA Czech.
 SO Czech., 2 pp.
 CODEN: CZXXA9
 DT Patent
 LA Czech
 FAN.CNT 1

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PRAI	CS 1986-9452		19861217		
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 The compn. is used as an aerosol for **bee** colonies.

AN 1998:17197 CABA
 DN 981100478
 TI Toxicity of seven monoterpenoids to tracheal **mites** (Acari: Tarsonemidae) and their honey **bee** (Hymenoptera: Apidae) hosts when applied as fumigants
 AU Ellis, M. D.; Baxendale, F. P.
 CS Department of Entomology, University of Nebraska, 202 Plant Industries Building, Lincoln, NE 68583-0816, USA.
 SO Journal of Economic Entomology, (1997) Vol. 90, No. 5, pp. 1087-1091. 34 ref.
 ISSN: 0022-0493
 DT Journal
 LA English
 TI Toxicity of seven monoterpenoids to tracheal **mites** (Acari: Tarsonemidae) and their honey **bee** (Hymenoptera: Apidae) hosts when applied as fumigants.
 AB Laboratory bioassays were conducted to characterize the acute toxicity of 7 monoterpenoids to **Acarapis woodi** and its host **Apis mellifera**. Citral, thymol, carvacrol, alpha -terpineol, pulegone, **d-limonene**, and menthol were applied as fumigants to **mite-infested honey bees**. Thymol and menthol were the most toxic compounds to honey **bees**, and alpha -terpineol was the least toxic. Menthol, citral, thymol, and carvacrol were more toxic to tracheal **mites** than to honey **bees**. Pulegone, **d-limonene**, and alpha -terpineol were more toxic to honey **bees** than to tracheal **mites**. Menthol was 18.9 times more toxic to tracheal **mites** than to honey **bees** at the LC50 concentrations; however, as the concentration increased, **bee** mortality increased more rapidly than **mite** mortality, and menthol was only 5.7 times more toxic at the LC90 concentrations. Probit regressions for **bee** and **mite** mortality were parallel for citral and thymol. Citral and thymol were 2.9 (2.5-3.3) and 2.0 (1.0-3.6) times more toxic to tracheal **mites**, respectively, at all concentrations estimated.

AN 92:125895 CABA
DN 920232424
TI Evaluation of botanical compounds for control of the honey-bee
tracheal mite, *Acarapis woodi*
AU Calderone, N. W.; Bruce, W. A.; Allen-Wardell, G.; Shimanuki, H.
CS Bee Research Laboratory, ARS, USDA, Building 476, BARC-EAST, Beltsville,
MD 20705, USA.
SO American Bee Journal, (1991) Vol. 131, No. 9, pp. 589-591. Bj.
ISSN: 0002-7626
DT Journal
LA English
TI Evaluation of botanical compounds for control of the honey-bee
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AB Several compounds were tested in the laboratory on groups of workers from
Acarapis-infested honey bee (*Apis mellifera*)
colonies. Clove oil killed 78.2% of mites and citronellal 63.4%;
both mortalities were significantly higher than that (11.6%) in untreated
controls. D-limonene killed nearly 30% of
mites. In a second series of tests, the mortalities of
mites treated by the following compounds were significantly higher
than in controls (11.1%): alpha -terpinene (39.3%), terpineol (28.5%) and
menthol (34.7%). Two of the compounds, alpha -pinene and alpha -terpinene,
caused higher mortalities than in controls, but differences were not
significant. All the plant-derived compounds (but alpha -pinene not
reported) caused lower bee mortality than was caused by menthol.

AN 80:7557 CABA
DN 790209312
TI Chemical for controlling **honeybee** parasites
CS USSR, All-Union Scientific Research Institute of Veterinary Sanitation
PI 19780000
SO Japanese Kokai (unexamined patent application), No. 53-139722, pp. 7. B.
DT Patent
LA Japanese
TI Chemical for controlling **honeybee** parasites.
AB **Honeybee** diseases caused by **Acarapis woodi** and **Varroa jacobsoni** are controlled with N-methylcarbamates. Thus, 0.02% 1-naphthyl N-methylcarbamate in **acetone** controlled infestations of these **mites** in **honeybees**. [Chem.Abstr. 90 : 116454p (1979).] F. B. Wells

AN 80:7345 CABA
DN 790209033
TI Acaricide preparations for the diagnosis and control of ectoparasites of **honeybees**
Akarizides Praparat zur Diagnostik und Bekämpfung von Ektoparasiten der Bienen
AU Poljakov, A. A.; and 9 others; Polyakov, A. A.
CS Vsesoyuznoi Nauchno-issledovatel'skii Inst. Veterinarnoi Sanitarii, Moscow, USSR.
PI 19780000
SO German Federal Republic Offenlegungsschrift, No. 2719722, pp. 16. B.
DT Patent
LA German
TI [Acaricide preparations for the diagnosis and control of ectoparasites of **honeybees**].
Akarizides Praparat zur Diagnostik und Bekämpfung von Ektoparasiten der Bienen.
AB N-methylcarbamates control infestation of **honeybees** by **Acarapis woodi** and by **Varroa jacobsoni**. Thus, application to hives of a composition containing 0.025% by weight methyl-N-methylcarbamate, 19.975% **acetone**, and 80% difluorodichloromethane, completely controlled these **mites**. The compounds are also useful for diagnosis, since their application to infested **bees** led to the appearance of dead *V. jacobsoni* on the bottom of the hive. [Chem. Abstr. 90 : 49668w (1979).] F. B. Wells

AN 2001:92646 CABA
DN 20013082193
TI Evaluation of grapefruit essential oils for controlling *Varroa jacobsoni* and *Acarapis woodi*
AU Elzen, P. J.; Baxter, J. R.; Elzen, G. W.; Rivera, R.; Wilson, W. T.
CS Kika de la Garza Subtropical Agricultural Research Center, USDA-ARS, 2413 E. Hwy. 83, Weslaco, TX 78596, USA.
SO American Bee Journal, (2000) Vol. 140, No. 8, pp. 666-668. 10 ref. ISSN: 0002-7626
DT Journal
LA English
TI Evaluation of grapefruit essential oils for controlling *Varroa jacobsoni* and *Acarapis woodi*.
AB Four essential oils found in Citrus leaves - citral, limonene, citronellal, and linalool - were tested in the laboratory for effectiveness in knocking down *V. jacobsoni* mites from infested honey bees. Citral was the most effective, with 72.8% knockdown of mites from infested bees exposed to this compound. Only 7.9% initial knockdown of varroa mites was observed in the field test of citral, not significantly different from initial control mite drop. Total population change after 6 weeks of exposure between citral and control treatments was also not significantly different, with great increases in mite populations seen in the citral and control hives. Citral was more effective, however, in controlling the tracheal mite, *A. woodi*, resulting in a 66.8% reduction in populations after initial treatment. Discussion is presented on the use of natural essential oils in the control of honey bee acarine pests.

AN 2000-83996 CROPU I G
 TI Laboratory evaluation of miticides to control *Varroa jacobsoni*
 (Acari: Varroidae), a honey bee (Hymenoptera: Apidae) parasite.
 AU Lindberg C M; Melathopoulos A P; Winston M L
 CS Univ.Simon-Fraser
 LO Burnaby, B.C., Can.
 SO J.Econ.Entomol. (93, No. 2, 189-98, 2000) 3 Fig. 4 Tab. 47 Ref.
 CODEN: JEENAI
 AV Department of Biological Sciences, Simon Fraser University, Burnaby,
 B.C., Canada V5A 1S6.
 DT Journal
 LA English
 FA AB; LA; CT
 TI Laboratory evaluation of miticides to control *Varroa jacobsoni*
 (Acari: Varroidae), a honey bee (Hymenoptera: Apidae) parasite.
 AB Essential oil components was screened for selectivity and control of
Varroa jacobsoni on honeybees (*Apis mellifera*), using a dish bioassay method, and mite and
 bee LD50s were determined after 24, 34 and 67 hrs. Compounds
 were: alpha-terpineol, benzyl acetate, benzyl alcohol, camphor,
 carvacrol, cineole, cinnamic alcohol, cinnamic aldehyde, cinnamon oil,
 citronellal, clove oil, eugenol, methanol (solvent), n-hexane,
 limonene, Magic3 (a proprietary mix of 5 essential oil
 components), menthol, methyl salicylate, phenyl ethyl alcohol, phenyl
 ethyl propionate, pulegone, terpinen-4-ol, thymol and trans-anethole,
 with tau-fluvalinate and formic acid as positive controls. Highest
 mite toxicity and lowest bee mortality were with clove
 oil, benzyl acetate, thymol, carvacrol, methyl salicylate and Magic 3,
 and thymol, clove oil and Magic3 were most active by vapor exposure.
 ABEX Bees and mites were confined in 60 x 20 mm petri
 dishes with a sugar-cube for food, and test components (dissolved in
 hexane) were applied to the dish base, allowing, vapor, contact and oral
 applications. In some tests, organisms were exposed to vapor only.
 Treatments considered to be selective killed over 70% of mites
 at doses which killed less than 30% of bees. The most
 selective treatment was tau-fluvalinate, while thymol, clove oil, Magic3
 and methyl salicylate were at least as selective as formic acid.
 Estimated mite LD50s were significantly lower for complete
 exposure applications of thymol and Magic3 than for vapor applications,
 indicating that these compounds act mainly as fumigants, while estimated
 LD50s for clove oil were similar for both vapor and complete exposure.

AN 2000-84096 CROPU I G
 TI Method to control parasitic **mites** on beneficial insects e.g.
 Apidae.
 IN Black B C; Baubach W R; Beluch M P
 PA Am.Cyanamid
 LO Madison, N.J., USA
 PI EP 972448 A2 20000119
 AI US 1998-115787 19980714
 EP 1999-305410 19990707
 DT Patent
 LA English
 OS WPI: 2000-099724
 FA AB; LA; CT
 TI Method to control parasitic **mites** on beneficial insects e.g.
 Apidae.
 AB A method for the protection of beneficial insects, such as
honeybees, from infestation and damage caused by parasitic
mites, by application of tebufenpyrad (TEB) to the insects or
mites, their brood chamber or habitat, is claimed. In acaricidal
 bioassays, **honeybees** infested with 70-90% **Varroa**
jacobsoni received topical application of TEB (0.006, 0.06 and 0.6 ug/
bee). Treated **bees** were placed in an incubator at 31
 deg in the dark and fed a 50% sugar solution for 5 days; at 0.6 ug/
bee, mortality rates for **bees** and **mites** were
 28% and 92%, resp. **Honeybees** infested with **Acarapis**
woodi were treated with 500 ppm TEB in **acetone**; 100%
mite mortality occurred after 8-8.5 min. Field tests with two V.
jacobsoni infested hives, sticky boards treated with 18% TEB in
 beeswax/lard base were placed in the hives; one day after treatment,
mite counts of 1777 and 1080 **mites**/day were recorded.
 ABEX The method is claimed especially for the control of parasitic
mites, such as, V. **jacobsoni**, A. **woodi** and **Tropilaelaps clareae**.
 The claimed advantage is that the method can be used with little or no
 concomitant harm to the beneficial host. (4

AN 1998-83064 CROPU I G
 TI Controlling infestations in honey **bee** colonies e.g. **Varroa mites** using slow release gel containing essential oil or organic acid e.g. thymol.

IN Watkins M
 PA Vita-Euro
 LO Odiham, U.K.
 PI WO 9747193 A1 19971218
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 WO 1997-EP3078 19970612

DT Patent
 LA English
 OS WPI: 1998-051935 [05]
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 TI Controlling infestations in honey **bee** colonies e.g. **Varroa mites** using slow release gel containing essential oil or organic acid e.g. thymol.

AB A method for control of acarid, lepidopteran, fungal or bacterial infestations in **honeybee** colonies (especially **Varroa jacobsoni**) is described, using a slow release gel, containing an essential oil (preferably menthol, geraniol, thymol, myrcene, citral, **limonene**, carene, camphor, eugenol, cineole, lemon oil, eucalyptus oil or neem oil, especially thymol) or organic acid (e.g. formic, acetic or oxalic acid), to the hives. The slow release gel is also claimed. The gel is in a shallow tray dispenser with a hermetically sealing lid or in strips, pellets, tablets or dispenser trays, and is used for a 4-6 week treatment period. Preparation of formulations of thymol, camphor, calcium oxalate, cineole (eucalyptol), **limonene**, menthol, neem oil, acetic acid and formic acid. Tests with a 25% thymol formulation, at 1 or 2 trays/hive, for control of *V. jacobsoni* are also described.

ABEX The method is also useful for control of **Acarapis woodii**, *Tropilaelaps clareae*, *Galleria mellonella*, *Achroia grisella*, *Braula caeca*, *Ascosphaera apis*, *Bacillus* larvae and *Melissococcus pluton*, and is effective against both pyrethroid-resistant and susceptible *V. jacobsoni*. The concentration of oil or acid is chosen to reduce the level of **Varroa** infection to less than 20% over at least one **mite** reproductive cycle. The formulation comprises a regulated dose release of active substance into the hive over a set period of time, at 10-40 deg. The thymol preparation described consisted of 0.38 parts Carbopol EZ1 dissolved in 73.86 parts water, followed by 0.76 parts thymol, then 0.76 parts triethanolamine, to form a gel. Shallow plastic trays are filled with 50 g portions of the gel, then hermetically sealed. Similar formulations containing thymol (10, 15, 20, 25, 30, 35 or 40%), camphor (25%) and calcium oxalate (25%) are described, also suspensions containing cineole (25%), **limonene** (25%), menthol (25%), neem oil (25%), acetic acid (30%) and formic acid (25%). In tests with the 25% thymol gel, 1 or 2 trays, each containing 50 g gel, were opened and placed in a hive, on top of the brood frames, for 6 weeks. Average temperature was 33-34 deg inside the hive and 17-35 deg outside. After 6 weeks, *V. jacobsoni* infestation was reduced by 48.3% with 1 tray, 77.2% with 2 trays, and 12.9% in the untreated control. (16)

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CS Bee Research Laboratory, ARS, USDA, Building 476, BARC-EAST, Beltsville,
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SO American Bee Journal, (1991) Vol. 131, No. 9, pp. 589-591. Bj.
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both mortalities were significantly higher than that (11.6%) in untreated
controls. D-limonene killed nearly 30% of
mites. In a second series of tests, the mortalities of
mites treated by the following compounds were significantly higher
than in controls (11.1%): alpha -terpinene (39.3%), terpineol (28.5%) and
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90 : 116454p (1979).] F. B. Wells

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AU Poljakov, A. A.; and 9 others; Polyakov, A. A.
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SO German Federal Republic Offenlegungsschrift, No. 2719722, pp. 16. B.
DT Patent
LA German
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AN 2001:92646 CABA
 DN 20013082193
 TI Evaluation of grapefruit essential oils for controlling *Varroa jacobsoni* and *Acarapis woodi*
 AU Elzen, P. J.; Baxter, J. R.; Elzen, G. W.; Rivera, R.; Wilson, W. T.
 CS Kika de la Garza Subtropical Agricultural Research Center, USDA-ARS, 2413 E. Hwy. 83, Weslaco, TX 78596, USA.
 SO American Bee Journal, (2000) Vol. 140, No. 8, pp. 666-668. 10 ref. ISSN: 0002-7626
 DT Journal
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AN 2000-83996 CROPU I G
 TI Laboratory evaluation of miticides to control *Varroa jacobsoni*
 (Acari: Varroidae), a honey bee (Hymenoptera: Apidae) parasite.
 AU Lindberg C M; Melathopoulos A P; Winston M L
 CS Univ.Simon-Fraser
 LO Burnaby, B.C., Can.
 SO J.Econ.Entomol. (93, No. 2, 189-98, 2000) 3 Fig. 4 Tab. 47 Ref.
 CODEN: JEENAI
 AV Department of Biological Sciences, Simon Fraser University, Burnaby,
 B.C., Canada V5A 1S6.
 DT Journal
 LA English
 FA AB; LA; CT
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 (Acari: Varroidae), a honey bee (Hymenoptera: Apidae) parasite.
 AB Essential oil components was screened for selectivity and control of
Varroa jacobsoni on honeybees (*Apis mellifera*), using a dish bioassay method, and mite and
 bee LD50s were determined after 24, 34 and 67 hrs. Compounds
 were: alpha-terpineol, benzyl acetate, benzyl alcohol, camphor,
 carvacrol, cineole, cinnamic alcohol, cinnamic aldehyde, cinnamon oil,
 citronellal, clove oil, eugenol, methanol (solvent), n-hexane,
 limonene, Magic3 (a proprietary mix of 5 essential oil
 components), menthol, methyl salicylate, phenyl ethyl alcohol, phenyl
 ethyl propionate, pulegone, terpinen-4-ol, thymol and trans-anethole,
 with tau-fluvalinate and formic acid as positive controls. Highest
 mite toxicity and lowest bee mortality were with clove
 oil, benzyl acetate, thymol, carvacrol, methyl salicylate and Magic 3,
 and thymol, clove oil and Magic3 were most active by vapor exposure.
 ABEX Bees and mites were confined in 60 x 20 mm petri
 dishes with a sugar-cube for food, and test components (dissolved in
 hexane) were applied to the dish base, allowing, vapor, contact and oral
 applications. In some tests, organisms were exposed to vapor only.
 Treatments considered to be selective killed over 70% of mites
 at doses which killed less than 30% of bees. The most
 selective treatment was tau-fluvalinate, while thymol, clove oil, Magic3
 and methyl salicylate were at least as selective as formic acid.
 Estimated mite LD50s were significantly lower for complete
 exposure applications of thymol and Magic3 than for vapor applications,
 indicating that these compounds act mainly as fumigants, while estimated
 LD50s for clove oil were similar for both vapor and complete exposure.

AN 2000-84096 CROPU I G
 TI Method to control parasitic **mites** on beneficial insects e.g.
 Apidae.
 IN Black B C; Baubach W R; Beluch M P
 PA Am.Cyanamid
 LO Madison, N.J., USA
 PI EP 972448 A2 20000119
 AI US 1998-115787 19980714
 EP 1999-305410 19990707
 DT Patent
 LA English
 OS WPI: 2000-099724
 FA AB; LA; CT
 TI Method to control parasitic **mites** on beneficial insects e.g.
 Apidae.
 AB A method for the protection of beneficial insects, such as
honeybees, from infestation and damage caused by parasitic
mites, by application of tebufenpyrad (TEB) to the insects or
mites, their brood chamber or habitat, is claimed. In acaricidal
 bioassays, **honeybees** infested with 70-90% **Varroa**
jacobsoni received topical application of TEB (0.006, 0.06 and 0.6 ug/
bee). Treated **bees** were placed in an incubator at 31
 deg in the dark and fed a 50% sugar solution for 5 days; at 0.6 ug/
bee, mortality rates for **bees** and **mites** were
 28% and 92%, resp. **Honeybees** infested with **Acarapis**
woodi were treated with 500 ppm TEB in **acetone**; 100%
mite mortality occurred after 8-8.5 min. Field tests with two V.
jacobsoni infested hives, sticky boards treated with 18% TEB in
 beeswax/lard base were placed in the hives; one day after treatment,
mite counts of 1777 and 1080 **mites**/day were recorded.
 ABEX The method is claimed especially for the control of parasitic
mites, such as, V. **jacobsoni**, A. **woodi** and **Tropilaelaps clareae**.
 The claimed advantage is that the method can be used with little or no
 concomitant harm to the beneficial host. (4